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ABSTRACT

Effective instruction on a national scale is dependent on supplying competent teachers with comprehensive instructional materials and procedures that meet some kind of minimum criteria for accountability. Considerations included in a complete instructional system are: (1) outcomes; (2) assessment; (3) user experience data; (4) materials; (5) training; (6) reporting; (7) time and costs. The program must specify outcomes stating what the learners will be able to do as a result of instruction. When the outcomes are clearly stated, educators can validly assess whether a program is potentially worthwhile and appropriate for a particular population of students. Measures should be included that frequently assess pupil progress, and assessment materials should be directly keyed to a clearly defined set of outcomes. Empirical data regarding the development of an instructional program must not be overlooked. Data must be presented to indicate that outcomes have been consistently attained during previous use of the program in a wide range of situations and that learners and teachers have expressed satisfaction with the system. Included must be instructional and supplemental materials and activities that are keyed directly to the expected program outcomes and assessment materials. Materials for training teachers and other school personnel and for monitoring program performance are necessary. Time and cost effectiveness are the final considerations. (DMT)

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Considerations In Selecting Instructional Programs

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CONSIDERATIONS IN SELECTING INSTRUCTIONAL PROGRAMS

Fred C. Niedermeyer and Michael H. Moncrief

ABSTRACT

Characteristics of a complete instructional system are defined. Considerations included are outcomes, assessment, user experience data, materials, training, reporting, and time and costs. Each consideration is elaborated to indicate how it contributes to the effective operation of an instructional system.

CONSIDERATIONS IN SELECTING INSTRUCTIONAL PROGRAMS

Fred C. Niedermeyer and Michael H. Moncrief

Selection of instructional programs and materials for schools is an extremely important task. But on what bases do school authorities decide which reading series or which history text to purchase and use in their classrooms? Because complete instructional programs that contain an adequate accountability base for teaching important learner outcomes have not existed in the past and are in short supply at the present, schools have had to select textbooks and supplementary resource materials lacking in analytical and empirical soundness. Primarily, school authorities have based their selection decisions on analyses of the content and, in good measure, on the cosmetics of the materials themselves. As a consequence, with the great variability in teacher competence and practice, schools are often disappointed with the resulting record of pupil performance.

In recent years, publishers, educators, and the R & D community have begun to address the problem. Uniformly, they realize that demonstrably more effective instruction on a national scale is dependent upon supplying competent teachers with comprehensive instructional materials and procedures that meet some kind of minimum criteria with respect to analytic and empirical soundness.

Herein lies the problem: How does the concerned educator see to it that quality materials are produced that do indeed meet minimum criteria? He doesn't, directly. But as a professional decision-maker, the considerations he uses in selecting instructional programs, if sufficiently

uniform across the profession, will quickly serve to establish industry standards. Not so quickly produced, however, are the resulting instructional materials and procedures that reliably produce prespecified results. Patience from the profession may be required, but not without a continuing hard line of questioning.

Figure 1 contains a checklist of questions which, if answered positively, will go far in assuring schools of effective instruction on a national scale. The considerations reflected in the checklist are not intended to be exhaustive; the individual user may wish to consider many other possible characteristics of an instructional program. However, the considerations are intended to define a complete instructional program. A program that does not include these elements is incomplete, and should be recognized as such.

CONSIDERATION 1: Does the instructional program specify outcomes stating what the learners will be able to do as a result of instruction?

It is only when the outcomes to be accomplished by the learners in a program are clearly stated that educators can validly assess whether a program is potentially worthwhile and appropriate for a particular population of students. For example, one outcome of a beginning reading program might be for children to sound out new words composed of previously learned letter sounds. One outcome of a social studies program might be for students to distinguish fact from opinion in historical writings and news articles. Or, an art program might include an outcome in which students draw human and animal figures in correct size proportion.

Figure 1

Checklist of Considerations in Selecting Instructional Programs

☐ 1. Outcomes. Does the instructional program specify outcomes stating what the learners will be able to do as a result of instruction?

☐ 2. Assessment. Are measures included that frequently assess pupil progress towards program outcomes?

☐ 3. User Experience Data. Are data presented to indicate that (1) outcomes have been consistently attained during previous use of the program in a wide range of situations and (2) learners, teachers, and others involved in the program have expressed satisfaction with the system?

☐ 4. Materials. Are instructional and supplemental materials and activities included that are keyed directly to the expected program outcomes and assessment materials?

☐ 5. Training. Are materials and procedures included for training teachers and other school personnel to use the specified instructional materials and procedures?

☐ 6. Reporting. Are materials and procedures included for teachers and administrators to monitor program performance so as to identify and correct instructional problems?

☐ 7. Time and Costs. Are the time and cost requirements for establishing and operating the instructional system acceptable to those involved and reasonable in terms of expected outcomes for learners?

Specific outcome statements should not be confused with the global rhetoric that accompanies many programs. For example, the statements "Students will learn citizenship skills required for a democratic society" or "Children will exhibit a 10-month growth on a standardized reading test at the end of six months" are vague and tell little about what students will actually learn to do during the school year.

When instructional outcomes are well-stated, programs can be compared on the basis of the skills to be taught. Educators, parents, and community members can then determine which set of outcomes appears most worthwhile and appropriate for students to attain. Also, as will be seen, only instructional programs based on clearly specified outcomes will be able to satisfy many of the remaining considerations.

CONSIDERATION 2: Are measures included that frequently assess pupil progress towards program outcomes?

Without appropriate assessment materials and procedures, it is nearly impossible to determine if a program is effectively following through on its stated outcomes. Assessment materials should be directly keyed to a clearly defined set of outcomes. For example, if an outcome states that students are to draw human figures with the body and facial parts in correct size proportion, then the assessment should require students to draw human figures--not answer true-false questions about the various proportions.

Many different forms of assessment are possible, including observations, written and oral tests, and completed projects. Whatever form of assessment is provided, however, it should specifically evaluate the

stated outcomes of the program, so as to allow the teacher to make instructional decisions about individual students.

Many programs provide achievement tests for use at the end of the school year, and these are useful for summative evaluation of the program. However, more frequent assessment is also needed. To help a student learn effectively, the teacher needs to know exactly where the student is having difficulty. This information is needed throughout the school year when there is still time to provide the needed instruction.

Programs that contain appropriate assessment materials for a sequence of outcomes over a range of skill-levels lend themselves to the multi-level or non-graded approach. Entry-skills tests permit the placement of children in these programs at levels corresponding to their skills or abilities, rather than to their age or grade in school. Children may then progress through the program at a level that is realistic and appropriate to their needs and abilities.

An additional advantage of an outcomes-based program containing appropriate assessment is that teachers and pupils find it rewarding and motivating to regularly see empirical evidence of growth. In a well-developed instructional system, the results of assessment are usually positive and they can be shared with those concerned. If the results are not positive, then it signals that changes need to be formulated and tried out. Subsequent assessments will evaluate the efficacy of such changes.

CONSIDERATION 3: Are data presented to indicate that (1) outcomes have been consistently attained during previous use of the program in a wide range of situations and (2) learners, teachers, and others involved in the program have expressed satisfaction with the system?

The answer to this question determines whether a program has actually been quality verified in schools or whether it is a first-draft effort of undetermined effectiveness. Reports of development of outcomes-based instructional systems invariably show how early versions of a program are modified considerably to increase its effectiveness. Through a series of revisions and tryouts, "bugs" can be worked out of a program until it does reliably promote the intended outcomes. A program field tested in a variety of school locations and situations allows the potential user to better estimate program operation for his own situation. Yet, in a fairly recent EPIE report (American Education, 1971), it was estimated that less than two percent of all instructional programs available on the educational market at that time had been tested prior to publication.

Empirical data regarding the development of an instructional program must not be overlooked. Too often developers and publishers rely on a few carefully chosen testimonials to substantiate the credibility of a program. While such testimonials are invariably positive, they may not be representative of the majority of users. Quantitative data should be presented when reporting the cognitive and affective effectiveness of a program.

Primary criteria for determining the effectiveness of an instructional program are data resulting from assessment of the program's stated outcomes. These data should clearly indicate the contribution of the instructional

program in promoting the outcomes (i.e., baseline data and control groups). They should be straightforward and interpretable, so that a statistician is not required to evaluate their credibility.

CONSIDERATION 4: Are instructional and supplemental materials and activities included that are keyed directly to the expected program outcomes and assessment materials?

Examination of instructional materials has traditionally been the primary basis for program selection. Although factors such as visual appeal and overall durability are important selection considerations, they should not outweigh the instructional value of the materials themselves.

Instructional materials should be keyed directly to the outcomes of the program; that is, they should provide the means for the student to practice and improve the skills defined in the program's outcomes. If the stated outcomes of an art program include drawing basic shapes and designs, for example, the instructional materials should provide children opportunities to practice these skills. Of course, it is also imperative that instructional materials be interesting and appealing to students, and be convenient and easy for teachers to use.

In addition, instructional materials should include procedures or suggestions for supplementary activities for children whose performance in the program's assessment checks indicate the need for further instruction. Supplemental practice can take a number of forms, including specially designed exercises that are individually administered by student tutors or adult paraprofessionals. Whatever form supplemental instruction takes, it should be directly related to the program outcomes.

CONSIDERATION 5: Are materials and procedures included for training teachers and other school personnel to use the specified instructional and assessment materials and procedures?

The larger the program, the more important this consideration becomes. For example, the availability of training materials is more critical when selecting a complete elementary school reading program than when selecting a two-week unit on map skills. For outcomes-based programs of at least a semester or year in duration, a traditional teacher's text is usually insufficient for acquainting teachers with the procedures for conducting the program. The instructional, assessment, and supplemental activities in an outcomes-based program are new to most teachers and require the use of specialized materials and procedures (Niedermeyer, 1971). Many programs offer excellent instructional manuals and training. These training materials clearly identify and define the responsibilities of all personnel involved in program operation, including supervisors, administrators, paraprofessionals, and parents, as well as teachers.

To help teachers attain instructional success, the training should provide clear standards or expectations of class performance. For example, teachers should be given some idea of the average time required for most classes to complete an instructional unit, and of the levels of achievement that most children should attain.

CONSIDERATION 6: Are materials and procedures included for teachers and administrators to monitor program performance so as to identify and correct instructional programs?

A complete instructional program contains a system for reporting class progress on a regular basis, not only to help teachers and supervisors improve pupil performance, but also to keep relevant audiences

(parents, principals, teachers, supervisors, board members) informed of class, school, and district progress during the year. This performance reporting system should be keyed to the outcomes and assessment materials defined for the instructional program.

The performance reports can be completed by the teacher, or a computerized system can be used to score tests and print out status reports. In either case, teachers and administrators will have available report data to identify those areas where instruction needs to be analyzed and modified. It is important that the system include tested procedures for teachers and supervisors to use when analyzing and modifying instruction to remediate learning problems (Niedermeyer & Fischer, 1974).

With a performance reporting system, the notion of instruction accountability becomes operational in a positive way. Parents are rightfully informed of their children's specific skill proficiencies. Teachers, administrators, and supervisors have the means to identify and correct instructional problems when and where they occur. In short, on the basis of pupil performance data, educators can make substantial instructional decisions and rid themselves of the blame-casting mold traditionally used to explain away classroom learning failures.

CONSIDERATION 7: <u>Are the time and cost requirements for establishing and operating the instructional system acceptable to those involved and reasonable in terms of expected learner outcomes?</u>

Time and costs involved is the final consideration in selecting an instructional program. Some programs require extensive teacher training (e.g., up to six weeks); others require the involvement of many persons and perhaps a substantial curriculum adjustment. The school staff must

be prepared to accept, install, and operate such programs. The decision as to whether the time and expense involved is worth the effort in terms of the benefits to be derived from the program ultimately involves the nature and quality of the instructional program and its outcomes. If incomplete or poorly conceived and developed, the program is likely to make inefficient use of everyone's time and should not be selected.

Clearly, the type of program defined by these considerations (Fig. 1) has requirements different from traditional instructional texts. Systematically developed, research-based instructional programs are relatively new and have not as yet appeared on the educational market in large numbers. Raising the questions inherent in the considerations will, however, increase the likelihood that publishers will accelerate development and availability of such programs. As these programs do become available, those interested in obtaining effective, reliable instruction for their schools will do well to seek them out.

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